

VARIOUS CHECKLISTS

FOR THE PERRY INITIAL EXAMINATION - JANUARY 2001

Facility: <u>Perry</u>		Date of Examination: <u>01/08/01 - 01/19/01</u>
Examinations Developed by: <input checked="" type="checkbox"/> Facility / NRC (circle one)		
Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	AMS
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	AMS
-120	3. Facility contact briefed on security & other requirements (C.2.c)	AMS
-120	4. Corporate notification letter sent (C.2.d)	AMS
[-90]	[5. Reference material due (C.1.e; C.3.c)]	N/A
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	AMS
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	AMS
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	AMS
-30	9. Preliminary license applications due (C.1.i; C.2.g; ES-202)	AMS
-14	10. Final license applications due and assignment sheet prepared (C.1.i; C.2.g; ES-202)	AMS
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	AMS
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	AMS
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	AMS
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	AMS
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	AMS
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	AMS
<p>* Target dates are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.</p> <p>[] Applies only to examinations prepared by the NRC.</p>		

Facility: Perry		Date of Examination: 1/08/01		Operating Test Number: 2001-01	
1. GENERAL CRITERIA		Initials			
		a	b	c	
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	DPJ	JSB	AMS	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	DPJ	JSB	AMS	
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	DPJ	JSB	AMS	
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	DPJ	JSB	AMS	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	DPJ	JSB	AMS	
2. WALK-THROUGH (CATEGORY A & B) CRITERIA		--	--	--	
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> initial conditions initiating cues references and tools, including associated procedures validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee specific performance criteria that include: <ul style="list-style-type: none"> detailed expected actions with exact criteria and nomenclature system response and other examiner cues statements describing important observations to be made by the applicant criteria for successful completion of the task identification of critical steps and their associated performance standards restrictions on the sequence of steps, if applicable 	DPJ	JSB	AMS	
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	DPJ	**	AMS	
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	DPJ	JSB	AMS	
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	DPJ	JSB	AMS	
3. SIMULATOR (CATEGORY C) CRITERIA		--	--	--	
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	DPJ	JSB	AMS	
a. Author	David P. Johnson / David P. Johnson	Date 11-16-00			
b. Facility Reviewer(*)	DAVID L. BAUGNESS / David L. Baugness	11-16-00			
c. NRC Chief Examiner (*)	Ann Marie Stone / Ann Marie Stone	1/4/01			
d. NRC Supervisor (*)	David E. Mills / David E. Mills	1/4/01			
(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.					

(**) The two prescribed questions in Admin. JPM A.4 (Ro) are closed-reference questions that meet ES-301 Attachment 1 criteria.

Facility: Perry		Date of Exam: 1/08/01	Scenario Numbers: 3	Operating Test No.: 2001-01		
QUALITATIVE ATTRIBUTES				Initials		
				a	b	c
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.			DPF	DB	AS
2.	The scenarios consist mostly of related events.			DPF	DB	AS
3.	Each event description consists of . the point in the scenario when it is to be initiated . the malfunction(s) that are entered to initiate the event . the symptoms/cues that will be visible to the crew . the expected operator actions (by shift position) . the event termination point (if applicable)			DPF	DB	AS
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.			DPF	DB	AS
5.	The events are valid with regard to physics and thermodynamics.			DPF	DB	AS
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			DPF	DB	AS
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.			DPF	DB	AS
8.	The simulator modeling is not altered.			DPF	DB	AS
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.			DPF	DB	AS
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.			DPF	DB	AS
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).			DPF	DB	AS
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).			DPF	DB	AS
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.			DPF	DB	AS
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)				Actual Attributes	-	-
1.	Total malfunctions (5-8)			10 / /	DPF	DB
2.	Malfunctions after EOP entry (1-2)			3 / /	DPF	DB
3.	Abnormal events (2-4)			4 / /	DPF	DB
4.	Major transients (1-2)			2 / /	DPF	DB
5.	EOPs entered/requiring substantive actions (1-2)			2 / /	DPF	DB
6.	EOP contingencies requiring substantive actions (0-2)			2 / /	DPF	DB
7.	Critical tasks (2-3)			5 / /	DPF	DB

Facility: Perry

Date of Exam: 1/08/01

Scenario Numbers: 2a / 2b / 2c

Operating Test No.: 2001-01

QUALITATIVE ATTRIBUTES		Initials			
		a	b	c	
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	DPF	DB	MS	
2.	The scenarios consist mostly of related events.	DPF	DB	MS	
3.	Each event description consists of . the point in the scenario when it is to be initiated . the malfunction(s) that are entered to initiate the event . the symptoms/cues that will be visible to the crew . the expected operator actions (by shift position) . the event termination point (if applicable)	DPF	DB	MS	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.	DPF	DB	MS	
5.	The events are valid with regard to physics and thermodynamics.	DPF	DB	MS	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	DPF	DB	MS	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	DPF	DB	MS	
8.	The simulator modeling is not altered.	DPF	DB	MS	
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	DPF	DB	MS	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.	DPF	DB	MS	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	DPF	DB	MS	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	DPF	DB	MS	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	DPF	DB	MS	
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes	-	-	-
1.	Total malfunctions (5-8)	12 / 10 / 9	DPF	DB	MS
2.	Malfunctions after EOP entry (1-2)	5 / 3 / 2	DPF	DB	MS
3.	Abnormal events (2-4)	4 / 4 / 4	DPF	DB	MS
4.	Major transients (1-2)	3 / 1 / 3	DPF	DB	MS
5.	EOPs entered/requiring substantive actions (1-2)	2 / 2 / 2	DPF	DB	MS
6.	EOP contingencies requiring substantive actions (0-2)	1 / 0 / 2	DPF	DB	MS
7.	Critical tasks (2-3)	2 / 2 / 2	DPF	DB	MS

Facility: Perry		Date of Exam: 1/08/01	Scenario Numbers: 1a / 1b / 1c		Operating Test No.: 2001-01	
QUALITATIVE ATTRIBUTES			Initials			
			a	b	c	
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.					
2.	The scenarios consist mostly of related events.					
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 					
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.					
5.	The events are valid with regard to physics and thermodynamics.					
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.					
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.					
8.	The simulator modeling is not altered.					
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.					
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.					
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).					
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).					
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.					
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes	--	--	--	--
1.	Total malfunctions (5-8)	9 / 14 / 8				
2.	Malfunctions after EOP entry (1-2)	3 / 3 / 1				
3.	Abnormal events (2-4)	2 / 5 / 3				
4.	Major transients (1-2)	3 / 2 / 1				
5.	EOPs entered/requiring substantive actions (1-2)	2 / 2 / 2				
6.	EOP contingencies requiring substantive actions (0-2)	4 / 0 / 0				
7.	Critical tasks (2-3)	5 / 3 / 3				

OPERATING TEST NO.:

Applicant	Evolution	Minimum Number	Scenario Number			
			1a	1c	2a	2c
Type	Type					
RO	Reactivity	1	2	1	5	3
	Normal	1	1	3	5	1,5
	Instrument	2	3,4,8	2,5	1,2	3,4,5,7
	Component	2	4,5,6,7	4,6,7	3,4,5,6,7,8,9	2,3,6,8
	Major	1	6,7,8	8	7,8,9	6,7,9
As RO	Reactivity	1	2	1	5	3
	Normal	0	1	3	5	1,5
	Instrument	1	3,4,8	2,5	1,2	3,4,5,7
	Component	1	4,5,6,7	4,6,7	3,4,5,6,7,8,9	2,3,6,8
	Major	1	6,7,8	8	7,8,9	6,7,9
	Reactivity	0	2	1	5	3
	Normal	1	1	3	5	1,5
	Instrument	1	3,4,8	2,5	1,2	3,4,5,7
	Component	1	4,5,6,7	4,6,7	3,4,5,6,7,8,9	2,3,6,8
	Major	1	6,7,8	8	7,8,9	6,7,9
As SRO	Reactivity	0	2	1	5	3
	Normal	1	1	3	5	1,5
	Instrument	1	3,4,8	2,5	1,2	3,4,5,7
	Component	1	4,5,6,7	4,6,7	3,4,5,6,7,8,9	2,3,6,8
	Major	1	6,7,8	8	7,8,9	6,7,9
SRO-U	Reactivity	0	2	1	5	3
	Normal	1	1	3	5	1,5
	Instrument	1	3,4,8	2,5	1,2	3,4,5,7
	Component	1	4,5,6,7	4,6,7	3,4,5,6,7,8,9	2,3,6,8
	Major	1	6,7,8	8	7,8,9	6,7,9

- Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
- (2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author:

Chief Examiner:

David P. Johnson

Ann Marie Stone

Crew D SROI/SROI/SROI

Competencies	Applicant #1 RO/SRO-I/SRO-U		
	SCENARIO		
	2a RO		2c SRO
Understand and Interpret Annunciators and Alarms	1,4,5 8,9		2,3,4 5,6,8
Diagnose Events and Conditions	4,6,7 8,10		2,3,4 5,6,7 8
Understand Plant and System Response	1,4,5 6,7,8 9,10		2,3,4 5,6,7 8
Comply With and Use Procedures (1)	1,4,5 6,7,8 9,10		2,3,4 5,6,7 8
Operate Control Boards (2)	1,4,5 6,7,8 9,10		NA
Communicate and Interact With the Crew	1,4,5 6,7,8 9,10		1,2,3 4,5,6 7,8
Demonstrate Supervisory Ability (3)	NA		1,2,3 4,5,6 7,8
Comply With and Use Tech. Specs. (3)	NA		3,6

Notes:
 (1) Includes Technical Specification compliance for an RO.
 (2) Optional for an SRO-U.
 (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author:

Chief Examiner:

David P. [Signature]
Ann Marie [Signature]

Crew B SRO/SRO/SRO

Competencies	Applicant #1 RO/SRO-I/SRO-U		
	SCENARIO		
	1a RO		1c SRO
Understand and Interpret Annunciators and Alarms	4,5 6,7		3,4,5 6,7,8
Diagnose Events and Conditions	4,5,6 7,8		2,4,5 6,7,8
Understand Plant and System Response	2,4,5 6,7,8		2,4,5 6,7,8
Comply With and Use Procedures (1)	2,4,5 6,7,8		2,4,5 6,7,8
Operate Control Boards (2)	2,4,5 6,7,8		NA
Communicate and Interact With the Crew	2,4,5 6,7,8		1,2,3 4,5,6 7,8
Demonstrate Supervisory Ability (3)	NA		1,2,3 4,5,6 7,8
Comply With and Use Tech. Specs. (3)	NA		2,4,6

Notes:
 (1) Includes Technical Specification compliance for an RO.
 (2) Optional for an SRO-U.
 (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author:

Chief Examiner:

David P. Johnson
Ann Marie Stone

Facility: Perry		Date of Exam: January 2001		Exam Level: RO/SRO																	
Item Description				Initial																	
				a	b*	c#															
1. Questions and answers technically accurate and applicable to facility				DPJ	JSB	AMS															
2. a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				DPJ	JSB	AMS															
3. RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				DPJ	JSB	AMS															
4. No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right		NRC	Other	DPJ	JSB	AMS															
		0	5																		
5. [No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]				DPJ	JSB	AMS															
6. Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right		Bank	Modified	New	DPJ	JSB	AMS														
		12	5	83																	
7. Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right		Memory		C/A	DPJ	JSB	AMS														
		41		59																	
8. References/handouts provided do not give away answers				DPJ	JSB	AMS															
9. Question distribution meets previously approved examination outline; deviations are justified				DPJ	JSB	AMS															
10. Question psychometric quality and format meet ES, Appendix B, guidelines				DPJ	JSB	AMS															
11. The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				DPJ	JSB	AMS															
<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"></td> <td style="width: 65%; text-align: center;">Printed Name / Signature</td> <td style="width: 20%; text-align: center;">Date</td> </tr> <tr> <td>a. Author</td> <td><u>David P. Johnson / David P. Johnson</u></td> <td><u>11-14-00</u></td> </tr> <tr> <td>b. Facility Reviewer(*)</td> <td><u>DANIEL BAUGUESSE / [Signature]</u></td> <td><u>11-14-00</u></td> </tr> <tr> <td>c. NRC Chief Examiner(*)</td> <td><u>Ann Marie Storey / Ann Marie Storey</u></td> <td><u>11/14/01</u></td> </tr> <tr> <td>d. NRC Regional Supervisor(*)</td> <td><u>Paul E. Halls / Paul E. Halls</u></td> <td><u>1-4-01</u></td> </tr> </table>								Printed Name / Signature	Date	a. Author	<u>David P. Johnson / David P. Johnson</u>	<u>11-14-00</u>	b. Facility Reviewer(*)	<u>DANIEL BAUGUESSE / [Signature]</u>	<u>11-14-00</u>	c. NRC Chief Examiner(*)	<u>Ann Marie Storey / Ann Marie Storey</u>	<u>11/14/01</u>	d. NRC Regional Supervisor(*)	<u>Paul E. Halls / Paul E. Halls</u>	<u>1-4-01</u>
	Printed Name / Signature	Date																			
a. Author	<u>David P. Johnson / David P. Johnson</u>	<u>11-14-00</u>																			
b. Facility Reviewer(*)	<u>DANIEL BAUGUESSE / [Signature]</u>	<u>11-14-00</u>																			
c. NRC Chief Examiner(*)	<u>Ann Marie Storey / Ann Marie Storey</u>	<u>11/14/01</u>																			
d. NRC Regional Supervisor(*)	<u>Paul E. Halls / Paul E. Halls</u>	<u>1-4-01</u>																			
<p>Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.</p> <p># See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.</p> <p>[] The items in brackets do not apply to NRC-prepared examinations.</p>																					

Facility: Perry		Date of Exam: January 2001		Exam Level: RO/SRO			
Item Description				Initial			
				a	b*	c#	
1. Questions and answers technically accurate and applicable to facility				DPJ	DB	AMS	
2. a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				DPJ	DB	AMS	
3. RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				DPJ	DB	AMS	
4. No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right		NRC	Other	DPJ	DB	AMS	
		0	7				
5. [No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]				DPJ	DB	AMS	
6. Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right		Bank	Modified	New	DPJ	DB	AMS
		12	7	81			
7. Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right		Memory		C/A	DPJ	DB	AMS
		44		56			
8. References/handouts provided do not give away answers				DPJ	DB	AMS	
9. Question distribution meets previously approved examination outline; deviations are justified				DPJ	DB	AMS	
10. Question psychometric quality and format meet ES, Appendix B, guidelines				DPJ	DB	AMS	
11. The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				DPJ	DB	AMS	
Printed Name / Signature a. Author <u>David P. Johnson / David P. Johnson</u> b. Facility Reviewer(*) <u>DAVID L. BANGNESS / [Signature]</u> c. NRC Chief Examiner(*) <u>AnnMarie Stone / AnnMarie Stone</u> d. NRC Regional Supervisor(*) <u>David E. Hill / David E. Hill</u>				Date a. <u>11-14-00</u> b. <u>11-14-00</u> c. <u>11/14/01</u> d. <u>1-4-01</u>			
Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required. # See special instructions (Section E.2.c) for Items 1, 4, 5, and 6. [] The items in brackets do not apply to NRC-prepared examinations.							

Facility:		Date of Exam:		Exam Level <u>RO</u> /SRO		
Item Description		Initials				
		a	b	c		
1.	Clean answer sheets copied before grading	DPJ	JS	AMS		
2.	Answer key changes and question deletions justified and documented	DPJ	JS	AMS		
3.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	DPJ	JS	AMS		
4.	Grading for all borderline cases (80% +/- 2%) reviewed in detail	DPJ	JS	AMS		
5.	All other failing examinations checked to ensure that grades are justified	DPJ	JS	AMS		
6.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	DPJ	JS	AMS		
Printed Name / Signature		Date				
a. Grader	David P. Johnson / <i>DPJ</i>	1/22/01				
b. Facility Reviewer(*)	DAVID L. BANGNESS / <i>DB</i>	1-22-01				
c. NRC Chief Examiner (*)	AnnMarie Stone / <i>AnnMarie Stone</i>	2/14/01				
d. NRC Supervisor (*)	David Mills / <i>David Mills</i>	2/15/01				
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.						

Facility:		Date of Exam:		Exam Level: RO (SRO)		
Item Description		Initials				
		a	b	c		
1.	Clean answer sheets copied before grading	DPJ	DB	AMS		
2.	Answer key changes and question deletions justified and documented	DPJ	DB	AMS		
3.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	DPJ	DB	AMS		
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6.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	DPJ	DB	AMS		

	Printed Name / Signature	Date
a. Grader	David P. Johnson / DPJ	1/22/01
b. Facility Reviewer(*)	DAVID L. BAUGRESS / DB	1-22-01
c. NRC Chief Examiner (*)	Ann Marie Stone / Ann Marie Stone	2/14/01
d. NRC Supervisor (*)	David C. H. '15 / David C. H. '15	2/15/01

(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1/08/2001 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 1/8th/15/01. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. <u>David P. Johnson</u>	<u>Lead Nuc. Instructor</u>	<u>David P. Johnson</u>	<u>6/15/00</u>	<u>David P. Johnson</u>	<u>1/22/01</u>	
2. <u>GARY D. LHAMMON</u>	<u>Exam Developer</u>	<u>Gary D. Lhammon</u>	<u>9/19/00</u>	<u>Gary D. Lhammon</u>	<u>1/22/01</u>	*
3. <u>JAMES L. BEAVERS</u>	<u>NUCLEAR INSTRUCTOR</u>	<u>James L. Beavers</u>	<u>10/24/00</u>	<u>James L. Beavers</u>	<u>1/22/01</u>	
4. <u>HENRY N. KELLY</u>	<u>Shift Supervisor</u>	<u>Henry N. Kelly</u>	<u>10/9/00</u>	<u>Henry N. Kelly</u>	<u>1/22/01</u>	
5. <u>DAVID W. O'DONNELL</u>	<u>Unit Supervisor</u>	<u>David W. O'Donnell</u>	<u>10-9-00</u>	<u>David W. O'Donnell</u>	<u>1-22-01</u>	
6. <u>FREDERICK W. SMITH</u>	<u>Shift Supervisor</u>	<u>Frederick W. Smith</u>	<u>10/9/00</u>	<u>Frederick W. Smith</u>	<u>1/22/01</u>	
7. <u>James A. Gerber</u>	<u>Simulator Hardware Tech</u>	<u>James A. Gerber</u>	<u>10/12/00</u>	<u>James A. Gerber</u>	<u>1/23/01</u>	
8. <u>DAVID L. BAUGNESS</u>	<u>SENIOR Nuc. INST./FACILITY RVW.</u>	<u>David L. Baugness</u>	<u>10/16/00</u>	<u>David L. Baugness</u>	<u>1/22/01</u>	
9. <u>DANIEL L. BENEDICT</u>	<u>Supervising Operator</u>	<u>Daniel L. Benedict</u>	<u>11/9/00</u>	<u>Daniel L. Benedict</u>	<u>1/22/01</u>	
10. <u>Steven L. Benedict</u>	<u>Unit Supervisor</u>	<u>Steven L. Benedict</u>	<u>11-9-00</u>	<u>Steven L. Benedict</u>	<u>1-22-01</u>	
11. <u>R.A. DiLoda</u>	<u>Unit Supervisor</u>	<u>R.A. DiLoda</u>	<u>11-9-00</u>	<u>R.A. DiLoda</u>	<u>1-22-01</u>	
12. <u>CRANK D. ADELIZZI</u>	<u>REACTOR OPERATOR</u>	<u>Crank D. Adelizzi</u>	<u>11-9-00</u>	<u>Crank D. Adelizzi</u>	<u>1-22-01</u>	
13. <u>Victor Colacicco</u>	<u>Supervising Operator</u>	<u>Victor Colacicco</u>	<u>11-27-00</u>	<u>Victor Colacicco</u>	<u>1-22-01</u>	
14. <u>CRANK BENTLEY</u>	<u>REACTOR OPERATOR</u>	<u>Crank Bentley</u>	<u>12-28-00</u>	<u>Crank Bentley</u>	<u>1-27-01</u>	
15. <u>Michael A. McFarland</u>	<u>POS Shift Supervisor</u>	<u>Michael A. McFarland</u>	<u>12/18/00</u>	<u>Michael A. McFarland</u>	<u>1/22/01</u>	

NOTES:

* See Page 3 - Mr. Lhammon was a contractor whose exam assignment was completed on 10/30/2000 at which time he left the site. 01/22/01

ES-201

Examination Security Agreement

Form ES-201-3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1/08/2001 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. Joseph D. Piensay	Instructor	<i>Joseph D. Piensay</i>	12/18/00	<i>Joseph D. Piensay</i>	1/22/01	
2. PAUL M. GODA	SUPERVISING OPERATOR	<i>Paul M. Goda</i>	12/19/00	<i>Paul M. Goda</i>	1/28/01	
3. MICHAEL NEMCEK	SHIFT SUPERVISOR	<i>Michael Nemcek</i>	12/19/00	<i>Michael Nemcek</i>	1/22/01	
4. Paul R. Hetrick	Supervising Operator	<i>Paul R. Hetrick</i>	12/20/00	<i>Paul R. Hetrick</i>	1/24/01	
5. PATRICK M. HARKINS	INSTRUCTOR	<i>Patrick M. Harkins</i>	12/20/00	<i>Patrick M. Harkins</i>	1/22/01	
6. TERRY J. REED	INSTRUCTOR	<i>Terry J. Reed</i>	12/21/00	<i>Terry J. Reed</i>	1/22/01	
7. FRANK MARTZ	COPY CENTER	<i>Frank M. Martz</i>	1-3-01	<i>Frank M. Martz</i>	1/22/01	
8. JAMES B. KELLY	Instructor	<i>James B. Kelly</i>	1/10/01	<i>James B. Kelly</i>	1/22/01	
9. Christopher E. Persson	Instructor	<i>Christopher E. Persson</i>	1/10/01	<i>Christopher E. Persson</i>	1/22/01	
10. Jeffery T. Steward	Instructor	<i>Jeffery T. Steward</i>	1/10/01	<i>Jeffery T. Steward</i>	1/22/01	
11. DALE RICHMOND	INSTRUCTOR	<i>Dale Richmond</i>	1/9/01	<i>Dale Richmond</i>	1/22/01	
12. BRIAN D. BOLES	OPERATIONS MANAGER	<i>Brian D. Boles</i>	1/10/01	<i>Brian D. Boles</i>	1/23/01	
13. HENRY G. BOER	INSTRUCTOR	<i>Henry G. Boer</i>	1/11/01	<i>Henry G. Boer</i>	1/22/01	
14. Kenneth L. Frazier	RP Supervisor	<i>Kenneth L. Frazier</i>	1/17/01	<i>Kenneth L. Frazier</i>	1/22/01	
15.						

NOTES:

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1/08/2001 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. <u>David P. Johnson</u>	<u>Lead Nuc. Instructor</u>	<u>David P. Johnson</u>	<u>6/15/00</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
2. <u>GARY D. LHAMON</u>	<u>Exam Developer</u>	<u>Gary D. Lhamon</u>	<u>9/19/00</u>			
3. <u>JAMES L. BEAVERS</u>	<u>NUCLEAR INSTRUCTOR</u>	<u>James L. Beavers</u>	<u>10/4/00</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
4. <u>HENRY N. KELLY</u>	<u>Shift Supervisor</u>	<u>Henry N. Kelly</u>	<u>10/9/00</u>			
5. <u>David W. O'Donnell</u>	<u>Unit Supervisor</u>	<u>David W. O'Donnell</u>	<u>10-9-00</u>			
6. <u>FREDERICK W. SANTA</u>	<u>Shift Supervisor</u>	<u>Frederick W. Santa</u>	<u>10/9/00</u>			
7. <u>James A. Gerber</u>	<u>Simulator Hardware TECH</u>	<u>James A. Gerber</u>	<u>10/12/00</u>			
8. <u>GARY D. LHAMON</u>	<u>EXAM DEVELOPER</u>	<u>Gary D. Lhamon</u>		<u>Gary D. Lhamon</u>	<u>01/22/01</u>	<u>*</u>
9.						
10.						
11.						
12.						
13.						
14.						
15.						

NOTES:

* See Page 1

October 24, 2000
PY-CEI/OIE-0512L

United States Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60532-4351

Attention: Ms. Ann Marie Stone
Chief Examiner

Perry Nuclear Power Plant
Docket No. 50-440
NRC Initial License Examination Outline

Dear Ms. Stone:

In accordance with NUREG-1021, ES-201, enclosed are the required examination materials that document the NRC initial license examination outline for the Perry Nuclear Power Plant. The examination materials are being developed in accordance with the guidelines specified in NUREG-1021, Revision 8. It is hereby requested that these examination materials be withheld from public disclosure until after the initial license examinations are completed. The tentative examination start date is January 8, 2001. In addition to Form ES-201-2, the following additional forms are also included to complete the examination outline:

Written Examination

Form ES-401-1 for a BWR SRO Examination
Form ES-401-5 for a BWR SRO Examination
Form ES-401-2 for a BWR RO Examination
Form ES-401-5 for a BWR RO Examination

Administrative Topics

Form ES-301-1 for a BWR SRO Examination
Form ES-301-1 for a BWR RO Examination

Control Room Systems and Facility Walkthrough (JPMs)

Form ES-301-2 for a BWR SRO Examination
Form ES-301-2 for a BWR RO Examination

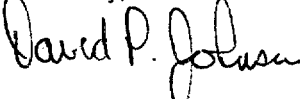
Simulator Scenarios

Form ES-D-1 for 3 proposed simulator scenarios for Days 1 and 2
Form ES-D-1 for 1 proposed simulator backup scenario

Justification Memo – Annotates the justifications for deleting various items from the examination outlines.

If you have questions or require additional information, please contact me at (440) 280-5277.

Sincerely,



D. P. Johnson
Nuclear Quality Instructor



David L. Bauguess
Facility Representative

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT
U.S. NUCLEAR REGULATORY COMMISSION
OPERATOR LICENSE EXAMINATION
FOR
PERRY NUCLEAR POWER PLANT
JANUARY 2001**

PROCEDURES AND STANDARDS

**OPERATOR TRAINING GUIDELINE
OTG-18, NRC INITIAL EXAM DEVELOPMENT, VALIDATION AND
ADMINISTRATION**

10 CFR 55, OPERATOR LICENSES SECTIONS 41, 43, 45

**NUREG 1021 REVISION 8, OPERATOR LICENSING EXAMINATION
STANDARDS FOR POWER REACTORS**

**NUREG 1123 REVISION 2, KNOWLEDGE AND ABILITIES CATALOG FOR
NUCLEAR POWER PLANT OPERATORS: BOILING WATER REACTORS**

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT**

**JUSTIFICATIONS FOR DELETIONS ON
WRITTEN EXAMINATION OUTLINE**

SYSTEMS DELETED (BOTH RO AND SRO)

- | | |
|--------|--|
| 201002 | Reactor Manual Control System - This system is not incorporated into the BWR-6 design. The functions of this system are incorporated into the Rod Control and Information System. |
| 201004 | Rod Sequence Control System - This system is not incorporated into the BWR-6 design. The functions of this system are incorporated into the Rod Control and Information System. |
| 201006 | Rod Worth Minimizer System - This system is not incorporated into the BWR-6 design. The functions of this system are incorporated into the Rod Control and Information System. |
| 214000 | Rod Position Information System - This system is not incorporated into the BWR-6 design. The functions of this system are incorporated into the Rod Control and Information System. |
| 215002 | Rod Block Monitor System - This system is not incorporated into the BWR-6 design. The functions of this system are incorporated into the Rod Control and Information System. |
| 206000 | High Pressure Core Injection (HPCI) - This system is not incorporated into the BWR 6 design. |
| 207000 | Isolation (Emergency) Condenser - This system is not incorporated into the BWR 6 design. This was replaced by the Mark III Containment Suppression Pool. |
| 219000 | RHR/LPCI: Torus Cooling Mode - The BWR 6 Mark III Containment utilizes a Suppression Pool instead of a Torus. |
| 230000 | RHR/LPCI: Torus/Pool Spray Mode - This system is not incorporated into the BWR 6 Mark III Containment design. |
| 239003 | Main Steam Isolation Valve Leakage Control System – This system has been deleted as authorized by Tech Spec Amendment 103. |
| 268000 | Radwaste System – Radwaste Systems are operated by personnel in the Radwaste/Environmental/Chemistry Section (RECS); this is not a job function of the licensed Control Room operators at Perry. |

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT**

- 215001 Traversing In-Core Probe System – This system is operated by Reactor Engineering personnel; this is not a job function of the licensed Control Room operators at Perry.
- 290001 Secondary Containment System – Contacted AM Stone (NRC) with information from our USAR (Section 6.2.3), PEI Bases Document, and Technical Specifications (LCO 3.6.4.1) with system design information in order to make a comparison with the K/As for this system in order to justify its deletion from the written sample plan. Based on this information provided, this system has been deleted from the random sample plan.

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT**

WRITTEN EXAMINATION

Knowledge and Abilities which were hit on the random selection which had Importance values < 2.5 were replaced with alternate random selections.

Knowledge and Abilities that were hit on the random selection which in NUREG 1123 listed NONE were replaced with alternate topics for the System or Evolution.

Plant Generics Knowledge and Abilities

Based on 127 topic areas that apply to a single unit BWR.

			RO	SRO
Conduct of Operations	34 topics = 27%		3	4
Equipment Control	32 topics = 25%		3	5
Radiation Control	11 topics = 9%		2	2
Emergency Procedures/Plan	50 topics = 39%		5	6
<hr/> TOTAL	<hr/> 127	<hr/> 100%	<hr/> 13	<hr/> 17

BOTH WRITTEN (RO & SRO)

295038 Moved from EK2 which was random to Generic 2.1.28 in order to examine student knowledge of new FWLCS design due to DCP 98-0052 as allowed by ES-401, Section D.1.c

295031 Topics EK1.01 and EA2.04 which were random both addressed the same subject (adequate core cooling). Randomly substituted EK1.03 for EK1.01.

600000 Moved from AK3 that was random to Generic 2.4.27 (knowledge of fire in the plant procedure).

219000 Moved from K3.01 which was random to Generic 2.1.33 (Ability to recognize indications for system operating parameter which are entry-level conditions for technical specifications).

400000 Moved from K6.01 which was random to K2.01 in order to examine student knowledge of new power supply for Service Water Pump D due to DCP 99-5019 as allowed by ES-401, Section D.1.c

Generic 2.1.21 Was not used since it is being examined as an Admin JPM.

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT**

241000 Moved from K1 that was random to Generic 2.1.32 (Ability to explain and apply system limits and precautions) to examine student knowledge of the reactor power limitation and the reason for the limitation following implementation of power uprate as allowed by ES-401, Section D.1.c.

211000 Moved from K6 that was random to Generic 2.1.12 (Ability to apply technical specifications for a system) as allowed by ES-401, Section D.1.c

Generic 2.4.49 selected to examine student knowledge of new Off-Normal Instruction (ONI-P56, Security Intrusion) as allowed by ES-401, Section D.1.c.

Generic 2.2.3 and 2.2.4 not applicable to Perry (Perry is a single unit facility).

WRITTEN (SRO ONLY)

Tier 1 Group 2 Evolutions 295028, 295032, and 295034 randomly deleted.

Tier 2 Group 2 Systems 215003, 262000, 271000, and 286000 randomly deleted.

Tier 2 Group 3 Systems 239001 and 288000 randomly deleted.

WRITTEN (RO ONLY)

Tier 1 Group 2 Evolutions 295013, 295028, 295033, and 295034 were randomly deleted.

Tier 1 Group 3 Evolution 295032 was randomly deleted.

**NRC EXAMINATION JANUARY 2001
PERRY NUCLEAR POWER PLANT**

**JUSTIFICATIONS FOR CHANGES ON
CONTROL ROOM SYSTEMS AND FACILITY WALK-THROUGH OUTLINE**

JPM B.2.a (Sec Containment 295033) deleted based on feedback from NRC Chief Examiner Ann Marie Stone on 10/5/2000. Randomly selected System Function 4: Heat Removal From Reactor Core (RHR/LPCI:Injection Mode 203000).

**JUSTIFICATIONS FOR CHANGES ON
ADMINISTRATIVE TOPICS OUTLINE**

Admin JPM A.2 (RO) (Gen 2.2.23) deleted based on evaluation that the JPM would not differentiate between those applicant's who are competent to safely operate the plant and those who are not (ES-301 D.1.d). Selected Gen 2.2.12 (Knowledge of Surveillance Procedures) as a replacement.

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	DPJ	DB	AMS
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.	DPJ	DB	AMS
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	DPJ	DB	AMS
	d. Assess whether the repetition from previous examination outlines is excessive.	DPJ	DB	AMS
2. S I M	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.	DPJ	DB	AMS
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.	DPJ	DB	AMS
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	DPJ	DB	AMS
3. W / T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	DPJ	DB	AMS
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	DPJ	DB	AMS
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	DPJ	DB	AMS
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	DPJ	DB	AMS
	e. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	DPJ	DB	AMS
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	DPJ	DB	AMS
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	DPJ	DB	AMS
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	DPJ	DB	AMS
	d. Check for duplication and overlap among exam sections.	DPJ	DB	AMS
	e. Check the entire exam for balance of coverage.	DPJ	DB	AMS
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	DPJ	DB	AMS
a. Author <u>David P. Johnson</u> b. Facility Reviewer(*) <u>DAVID L. BAIGUES</u> c. Chief Examiner <u>Ann Marie Stone</u> d. NRC Supervisor <u>Paul E. Halls</u>		Printed Name / Signature Date <u>10-16-2000</u> <u>10-23-00</u> <u>11/7/00</u> <u>11/7/00</u>		

(*) Not applicable for NRC-developed examinations.

Facility: Perry		Date of Exam: 1/08/2000						Exam Level: RO						
Tier	Group	K/A Category Points											Point Total	
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *		
1. Emergency & Abnormal Plant Evolutions	1	3	1	3				4	2			0	13	
	2	3	8	2				1	3			2	19	
	3	1	0	2				1	0			0	4	
	Tier Totals	7	9	7				6	5			2	36	
2. Plant Systems	1	3	1	3	4	3	1	2	3	4	3	1	28	
	2	3	2	1	2	2	3	1	1	1	2	1	19	
	3	1	0	0	1	0	0	0	1	1	0	0	4	
	Tier Totals	7	3	4	7	5	4	3	5	6	5	2	51	
3. Generic Knowledge and Abilities						Cat 1		Cat 2		Cat 3		Cat 4		13
						3		3		2		5		
<p>Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).</p> <p>2. Actual point totals must match those specified in the table.</p> <p>3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.</p> <p>4. Systems/evolutions within each group are identified on the associated outline.</p> <p>5. The shaded areas are not applicable to the category/tier.</p> <p>6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.</p> <p>7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.</p>														

ES-401		BWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1						Form ES-401-2	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295005 Main Turbine Generator Trip / 3				3			RC&IS	2.7	1
295006 SCRAM / 1				5			Neutron Monitoring System	4.2	1
295007 High Reactor Pressure / 3					3		Reactor Water Level	3.7	1
295009 Low Reactor Water Level / 2				3			Recirculation System	3.0	1
295010 High Drywell Pressure / 5					5		Drywell Air Cooler Drain Flow	3.3	1
295014 Inadvertent Reactivity Addition / 1			1				Reactor Scram	4.1	1
295015 Incomplete SCRAM / 1	4						Reactor Pressure	3.8	1
295024 High Drywell Pressure / 5			6				Reactor Scram	4.0	1
295025 High Reactor Pressure / 3			6	3			Alternate Rod Insertion SRVs	4.2 4.4	1 1
295031 Reactor Low Water Level / 2	3						Water Level Effects on Reactor Power	3.7	1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1		2					RRCS	4.0	1
500000 High Containment Hydrogen Conc. / 5	1						Containment Integrity	3.3	1
K/A Category Totals:	3	1	3	4	2	0	Group Point Total:		13

ES-401		BWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2						Form ES-401-2	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4			1				Reactor Water Level Response	3.4	1
295002 Loss of Main Condenser Vacuum / 3		11					Seal Steam	2.6	1
295003 Partial or Complete Loss of AC Pwr / 6		4					AC Electrical Loads	3.4	1
295004 Partial or Complete Loss of DC Pwr / 6					3		Battery Voltage	2.8	1
295008 High Reactor Water Level / 2	1						Moisture Carryover	3.0	1
295011 High CTMT Temperature / 5		1					Containment Ventilation Cooling	3.7	1
295012 High Drywell Temperature / 5		2					Drywell Cooling	3.6	1
295013 High Suppression Pool Temp. / 5									
295016 Control Room Abandonment / 7		2					Local Control Stations	4.0	1
295017 High Off-site Release Rate / 9				6			Condenser Air Removal System	3.2	1
295018 Partial or Complete Loss of CCW / 8		1					System Loads	3.3	1
295019 Part. or Comp. Loss of Inst. Air / 8					2		Status of Safety-Related Instrument Air Loads	3.6	1
295020 Inadvertent Cont. Isolation / 5 & 7		9					RHR/Shutdown Cooling	3.1	1
295022 Loss of CRD Pumps / 1	2						Reactivity Control	3.6	1
295026 High Suppression Pool Water Temp. / 5	1						Pump NPSH	3.0	1
295027 High Containment Temperature / 5		2					Components Internal to the Containment	3.2	1
295028 High Drywell Temperature / 5									
295029 High Suppression Pool Water Level / 5			1				Emergency Depressurization	3.5	1
295030 Low Suppression Pool Water Level / 5					2		SP Temperature	3.9	1
295033 High Sec. Cont. Area Rad. Levels / 9									
295034 Sec. Cont. Ventilation High Rad. / 9									
295038 High Off-site Release Rate / 9						2. 1. 28	Knowledge of the Purpose and Function of Major System Components and Controls	3.2	1
600000 Plant Fire On Site / 8						2. 4. 27	Knowledge of Fire in the Plant Procedure	3.0	1
K/A Category Point Totals:	3	8	2	1	3	2	Group Point Total:		19

ES-401		BWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3						Form ES-401-2	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295021 Loss of Shutdown Cooling / 4	4						Natural Circulation	3.6	1
295023 Refueling Accidents / 8			3				Ventilation Isolation	3.3	1
295032 High Secondary Containment Area Temperature / 5									
295035 Secondary Containment High Differential Pressure / 5				2			SBGT	3.8	1
295036 Secondary Containment High Sump/Area Water Level / 5			2				Reactor Scram	2.8	1
K/A Category Point Totals:	1	0	2	1	0	0	Group Point Total:		4

BWR RO Examination Outline Plant Systems - Tier 2/Group 1													Form ES-401-2	
ES-401														
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201001 CRD Hydraulic			1									Recirculation Pumps	3.0	1
201002 RMCS														
201005 RCIS								3		1		Insert Block Operator Control Module	3.2 3.7	1 1
202002 Recirculation Flow Control	12								2			Recirculation Flow Control Valves Lights and Alarms	3.7 3.4	1 1
203000 RHR/LPCI: Injection Mode				14								Operation from Remote Shutdown Panel	3.6	1
206000 HPCI														
207000 Isolation (Emerg.) Condenser														
209001 LPCS			2									ADS Logic	3.8	1
209002 HPCS										15		Initiation Reset	3.6	1
211000 SLC		2										Explosive Valves	3.1	1
212000 RPS						5		8				RPS Sensor Inputs Low Reactor Water Level	3.5 4.1	1 1
215003 IRM			3									RC&IS	3.7	1
215004 SRM									4			Control Rod Block Status	3.6	1
215005 APRM / LPRM				7								Flow Biased Trip Setpoint	3.7	1
216000 Nuclear Boiler Instrumentation					7							Elevated Containment Temperature Effects on Vessel Level Indication	3.6	1
217000 RCIC	3				6							Turbine Operation Suppression Pool	2.7 3.6	1 1
218000 ADS				2			5					Reactor Water Level Allows Manual Initiation of ADS	4.1 3.8	1 1
223001 Primary CTMT and Auxiliaries					1							Vacuum Breaker/Relief Operation	3.1	1
223002 PCIS/Nuclear Steam Supply Shutoff									2			Valve Closures	3.5	1
239002 SRVs								3				Stuck Open SRV	4.1	1
241000 Reactor/Turbine Pressure Regulator											2. 1. 32	Ability to Explain and Apply System Limits and Precautions	3.4	1
259001 Reactor Feedwater										2		Manually Start/Control TDRFP	3.9	1
259002 Reactor Water Level Control							2					Reactor Feedwater Flow	3.6	1
261000 SGTS	2											Drywell	3.2	1
264000 EDGs				7					1			Local Operation and Control Auto Start of Compressor and Generator	3.3 3.0	1 1
K/A Category Point Totals:	3	1	3	4	3	1	2	3	4	3	1	Group Point Total:		28

ES-401	BWR RO Examination Outline Plant Systems - Tier 2/Group 2												Form ES-401-2	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism					5							Reverse Power Effect	3.0	1
201004 RSCS														
201006 RWM														
202001 Recirculation				15	5							Slow Speed Pump Start EOC-RPT	3.1 3.5	1 1
204000 RWCUC	15											Leak Detection	3.1	1
205000 Shutdown Cooling							6					Reactor Temperature	3.7	1
214000 RPIS														
215002 RBM														
219000 RHR/LPCI: Torus/Pool Cooling Mode											2. 1. 33	Ability to Recognize Indications for System Operating Parameters Which are Entry-Level Conditions for Technical Specifications	3.4	1
226001 RHR/LPCI: CTMT Spray Mode						8						Nuclear Boiler Instrumentation	2.7	1
230000 RHR/LPCI: Torus/Pool Spray Mode														
239001 Main and Reheat Steam	22											Feedwater System	3.1	1
245000 Main Turbine Gen. and Auxiliaries								6				Loss of Extraction Steam	2.9	1
256000 Reactor Condensate		1										System Pumps	2.7	1
262001 AC Electrical Distribution										2		Synchroscope	3.4	1
262002 UPS (AC/DC)						3						Static Inverter	2.7	1
263000 DC Electrical Distribution			3									Systems With DC Components	3.4	1
271000 Offgas						8						Condenser Air Removal System	2.9	1
272000 Radiation Monitoring				2								Automatic Actions to Contain the Radioactive Release in the Event that the Predetermined Release Rates are Exceeded	3.7	1
286000 Fire Protection									4			System Initiation	3.2	1
290001 Secondary CTMT														
290003 Control Room HVAC										3		Reposition Dampers	2.8	1
300000 Instrument Air	5											MSIV Air	3.1	1
400000 Component Cooling Water		1										Pumps	2.9	1
K/A Category Point Totals:	3	2	1	2	2	3	1	1	1	2	1	Group Point Total:		19

ES-401		BWR RO Examination Outline Plant Systems - Tier 2/Group 3											Form ES-401-2	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
215001 Traversing In-core Probe														
233000 Fuel Pool Cooling and Cleanup								3				Low Surge Tank Level/High Level	2.8	1
234000 Fuel Handling Equipment									2			Interlock Operation	3.1	1
239003 MSIV Leakage Control														
268000 Radwaste														
288000 Plant Ventilation	5											Process Radiation Monitoring System	3.3	1
290002 Reactor Vessel Internals				2								Separation of Fluid Flow Paths Within the Vessel	3.1	1
K/A Category Point Totals:	1	0	0	1	0	0	0	1	1	0	0	Group Point Total:		4
Plant-Specific Priorities														
System / Topic	Recommended Replacement for...						Reason					Points		
Gen 2.1.28 – Knowledge of the purpose and function of major system components and controls	295038 EK2						Examine student knowledge of new FWLCS design due to DCP 98-0052					1		
Gen 2.1.32 – Ability to explain and apply system limits and precautions	241000 K1						Examine student knowledge of IOI Precaution and Limitation which places a limit on reactor power after Power Uprate approval					1		
System 400000 K2.01	System 400000 K6.01						Examine student knowledge of DCP 99-5019 which changed the 4.16 for power supply for Service Water Pump D					1		
Plant-Specific Priority Total: (limit 10)													3	

Facility: Perry		Date of Exam: 1/08/2000		Exam Level: RO	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1. 32	Ability to explain and apply limits and precautions	3.4	1	
	2.1. 22	Ability to determine mode of operation	2.8	1	
	2.1. 2	Knowledge of operator responsibilities during all modes of plant operation	3.0	1	
	Total			3	
Equipment Control	2.2. 12	Knowledge of surveillance procedures	3.0	1	
	2.2. 26	Knowledge of refueling administrative requirements	2.5	1	
	2.2. 22	Knowledge of LCOs and safety limits	3.4	1	
	Total			3	
Radiation Control	2.3. 9	Knowledge of the process for performing a containment purge	2.5	1	
	2.3. 1	Knowledge of 10CFR20 and related facility control requirements	2.6	1	
	Total			2	
Emergency Procedures/ Plan	2.4. 49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls	4.0	1	
	2.4. 18	Knowledge of the specific bases for EOPs	2.7	1	
	2.4. 10	Knowledge of annunciator response procedures	3.0	1	
	2.4. 11	Knowledge of abnormal condition procedures	3.4	1	
	2.4. 35	Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications	3.3	1	
	Total			5	
Tier 3 Point Total (RO/SRO)				13/17	

Facility: Perry		Date of Exam: 1/08/2000		Exam Level: SRO									
Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	4	7	4				5	5			1	26
	2	3	5	4				2	2			1	17
	Tier Totals	7	12	8				7	7			2	43
2. Plant Systems	1	1	0	1	3	2	3	2	3	4	2	2	23
	2	2	1	2	2	0	0	1	1	1	2	1	13
	3	0	1	0	1	1	0	0	1	0	0	0	4
	Tier Totals	3	2	3	6	3	3	3	5	5	4	3	40
3. Generic Knowledge and Abilities							Cat 1	Cat 2	Cat 3	Cat 4	17		
							4	5	2	6			
<p>Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).</p> <p>2. Actual point totals must match those specified in the table.</p> <p>3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.</p> <p>4. Systems/evolutions within each group are identified on the associated outline.</p> <p>5. The shaded areas are not applicable to the category/tier.</p> <p>6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.</p> <p>7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.</p>													

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295003 Partial or Complete Loss of AC Pwr / 6		4					AC Electrical Loads	3.5	1
295006 SCRAM / 1				5			Neutron Monitoring System	4.2	1
295007 High Reactor Pressure / 3					3		Reactor Water Level	3.7	1
295009 Low Reactor Water Level / 2				3			Recirculation System	3.1	1
295010 High Drywell Pressure / 5					5		Drywell Air Cooler Drain Flow	3.3	1
295013 High Suppression Pool Temp. / 5		1			1		SP Cooling SP Temperature	3.7 4.0	1 1
295014 Inadvertent Reactivity Addition / 1		3	1				Fuel temperature Reactor Scram	3.4 4.1	1 1
295015 Incomplete SCRAM / 1	4						Reactor Pressure	3.8	1
295016 Control Room Abandonment / 7		2		8			Local Control Stations Reactor Pressure	4.1 4.0	1 1
295017 High Off-site Release Rate / 9				6			Condenser Air Removal System	3.2	1
295023 Refueling Accidents Cooling Mode / 8			3				Ventilation Isolation	3.6	1
295024 High Drywell Pressure / 5			6				Reactor Scram	4.1	1
295025 High Reactor Pressure / 3			6	3			Alternate Rod Insertion SRVs	4.4 4.4	1 1
295026 Suppression Pool High Water Temp. / 5	1						Pump NPSH	3.4	1
295027 High Containment Temperature / 5		2					Components Internal to the Containment	3.3	1
295030 Low Suppression Pool Water Level / 5		4			2		RHR/LPCI SP Temperature	3.8 3.9	1 1
295031 Reactor Low Water Level / 2	3				4		Water Level Effects on Reactor Power Adequate Core Cooling	4.1 4.8	1 1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1		2					RRCS	4.2	1
295038 High Off-site Release Rate / 9						2. 1. 28	Knowledge of the Purpose and Function of Major System Components and Controls	3.3	1
500000 High Containment Hydrogen Conc. / 5	1						Containment Integrity	3.9	1
K/A Category Totals:	4	7	4	5	5	1	Group Point Total:		26

ES-401 Emergency and Abnormal Plant Evolutions - Tier 1/Group 2							BWR SRO Examination Outline		Form ES-401-1	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4			1				Reactor Water Level Response	3.6	1	
295002 Loss of Main Condenser Vacuum / 3		11					Seal Steam	2.7	1	
295004 Partial or Total Loss of DC Pwr / 6					3		Battery Voltage	2.9	1	
295005 Main Turbine Generator Trip / 3				3			RC&IS	2.8	1	
295008 High Reactor Water Level / 2	1						Moisture Carryover	3.2	1	
295011 High Containment Temperature / 5		1					Containment Ventilation Cooling	4.0	1	
295012 High Drywell Temperature / 5		2					Drywell Cooling	3.7	1	
295018 Partial or Total Loss of CCW / 8		1					System Loads	3.4	1	
295019 Partial or Total Loss of Inst. Air / 8					2		Status of Safety-Related Instrument Air Loads	3.7	1	
295020 Inadvertent Cont. Isolation / 5 & 7		9					RHR/Shutdown Cooling	3.3	1	
295021 Loss of Shutdown Cooling / 4	4						Natural Circulation	3.7	1	
295022 Loss of CRD Pumps / 1	2						Reactivity Control	3.7	1	
295028 High Drywell Temperature / 5										
295029 High Suppression Pool Water Level / 5			1				Emergency Depressurization	3.9	1	
295032 High Secondary Containment Area Temperature / 5										
295033 High Secondary Containment Area Radiation Levels / 9			2				Reactor Scram	3.6	1	
295034 Secondary Containment Ventilation High Radiation / 9										
295035 Secondary Containment High Differential Pressure / 5				2			SBGT	3.8	1	
295036 Secondary Containment High Sump/Area Water Level / 5			2				Reactor Scram	2.8	1	
600000 Plant Fire On Site / 8						2. 4. 27	Knowledge of Fire in the Plant Procedure	3.5	1	
K/A Category Point Totals:	3	5	4	2	2	1	Group Point Total:		17	

ES-401		BWR SRO Examination Outline Plant Systems - Tier 2/Group 1											Form ES-401-1	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201005 RCIS								3				Insert Block	3.2	1
202002 Recirculation Flow Control									2			Lights and Alarms	3.4	1
203000 RHR/LPCI: Injection Mode				14								Operation from Remote Shutdown Panel	3.7	1
206000 HPCI														
207000 Isolation (Emergency) Condenser														
209001 LPCS			2									ADS Logic	3.9	1
209002 HPCS										15		Initiation Reset	3.6	1
211000 SLC											2. 1. 12	Ability to Apply Technical Specifications for a System	4.0	1
212000 RPS						5		8				RPS Sensor Inputs Low Reactor Water Level	3.8 4.2	1 1
215004 Source Range Monitor									4			Control Rod Block Status	3.6	1
215005 APRM / LPRM				7								Flow Biased Trip Setpoint	3.7	1
216000 Nuclear Boiler Instrumentation					7							Elevated Containment Temperature Effects on Vessel Level Indication	3.8	1
217000 RCIC						1						Electrical Power	3.5	1
218000 ADS							5					Reactor Water Level	4.1	1
223001 Primary CTMT and Auxiliaries					1							Vacuum Breaker/Relief Operation	3.3	1
223002 PCIS/Nuclear Steam Supply Shutoff									2			Valve Closures	3.5	1
226001 RHR/LPCI: CTMT Spray Mode						8						Nuclear Boiler Instrumentation	2.8	1
239002 SRVs								3				Stuck Open SRV	4.2	1
241000 Reactor/Turbine Pressure Regulator											2. 1. 32	Ability to Explain and Apply System Limits and Precautions	3.8	1
259002 Reactor Water Level Control							2					Reactor Feedwater Flow	3.5	1
261000 SGTS	2											Drywell	3.4	1
262001 AC Electrical Distribution										2		Synchroscope	3.4	1
264000 EDGs				7					1			Local Operation and Control Auto Start of Compressor and Generator	3.4 3.1	1 1
290001 Secondary CTMT														
K/A Category Point Totals:	1	0	1	3	2	3	2	3	4	2	2	Group Point Total:		23

ES-401		BWR SRO Examination Outline Plant Systems - Tier 2/Group 2											Form ES-401-1	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201001 CRD Hydraulic			1									Recirculation Pumps	3.1	1
201002 RMCS														
201004 RSCS														
201006 RWM														
202001 Recirculation				15								Slow Speed Pump Start	3.4	1
204000 RWCU	15											Leak Detection	3.2	1
205000 Shutdown Cooling							6					Reactor Temperature	3.7	1
214000 RPIS														
215002 RBM														
215003 IRM														
219000 RHR/LPCI: Torus/Pool Cooling Mode											2. 1. 33	Ability to Recognize Indications for System Operating Parameters Which are Entry-Level Conditions for Technical Specifications	4.0	1
230000 RHR/LPCI: Torus/Pool Spray Mode														
234000 Fuel Handling Equipment									2			Interlock Operation	3.7	1
239003 MSIV Leakage Control														
245000 Main Turbine Gen. and Auxiliaries								6				Loss of Extraction Steam	3.1	1
259001 Reactor Feedwater										2		Manually Start/Control TDRFP	3.7	1
262002 UPS (AC/DC)														
263000 DC Electrical Distribution			3									Systems With DC Components	3.8	1
271000 Offgas														
272000 Radiation Monitoring				2								Automatic Actions to Contain the Radioactive Release in the Event that the Predetermined Release Rates are Exceeded	4.1	1
286000 Fire Protection														
290003 Control Room HVAC										3		Reposition Dampers	2.8	1
300000 Instrument Air	5											MSIV Air	3.2	1
400000 Component Cooling Water		1										Pumps	3.0	1
K/A Category Point Totals:	2	1	2	2	0	0	1	1	1	2	1	Group Point Total:		13

ES-401		BWR SRO Examination Outline Plant Systems - Tier 2/Group 3										Form ES-401-1		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism					5							Reverse Power Effect	3.1	1
215001 Traversing In-core Probe														
233000 Fuel Pool Cooling and Cleanup								3				Low Surge Tank Level/High Level	3.0	1
239001 Main and Reheat Steam														
256000 Reactor Condensate		1										System Pumps	2.8	1
268000 Radwaste														
288000 Plant Ventilation														
290002 Reactor Vessel Internals				2								Separation of Fluid Flow Paths Within the Vessel	3.2	1
K/A Category Point Totals:	0	1	0	1	1	0	0	1	0	0	0	Group Point Total:		4
Plant-Specific Priorities														
System / Topic	Recommended Replacement for...						Reason					Points		
Gen 2.1.28 – Knowledge of the purpose and function of major system components and controls	295038 EK2						Examine student knowledge of new FWLCS design due to DCP 98-0052					1		
Gen 2.1.32 – Ability to explain and apply system limits and precautions	241000 K1						Examine student knowledge of IOI Precaution and Limitation which places a limit on reactor power after Power Uprate approval					1		
System 400000 K2.01	System 400000 K6.01						Examine student knowledge of DCP 99-5019 which changed the 4.16kv power supply for Service Water Pump D					1		
Plant-Specific Priority Total (limit 10):													3	

Facility: Perry		Date of Exam: 1/08/2000		Exam Level: SRO	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1. 32	Ability to explain and apply limits and precautions	3.8	1	
	2.1. 22	Ability to determine mode of operation	3.3	1	
	2.1. 2	Knowledge of operator responsibilities during all modes of plant operation	4.0	1	
	2.1. 7	Ability to evaluate plant performance and make operational judgements based on operating characteristics/reactor behavior/and instrument interpretation	4.4	1	
	Total			4	
Equipment Control	2.2. 12	Knowledge of surveillance procedures	3.4	1	
	2.2. 26	Knowledge of refueling administrative requirements	3.7	1	
	2.2. 22	Knowledge of LCOs and safety limits	4.1	1	
	2.2. 20	Knowledge of the process for managing troubleshooting activities	3.3	1	
	2.2. 13	Knowledge of tagging and clearance procedure	3.8	1	
Total			5		
Radiation Control	2.3. 7	Knowledge of the process for preparing a radiation work permit	3.3	1	
	2.3. 1	Knowledge of 10CFR20 and related facility control requirements	3.0	1	
	Total			2	
Emergency Procedures/ Plan	2.4. 38	Ability to take actions called for in the facility emergency plan/including supporting or acting as emergency coordinator	4.0	1	
	2.4. 49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls	4.0	1	
	2.4. 18	Knowledge of the specific bases for EOPs	3.6	1	
	2.4. 6	Knowledge of symptom based EOP mitigation strategies	4.0	1	
	2.4. 17	Knowledge EOP terms and definitions	3.8	1	
	2.4. 25	Knowledge of fire protection procedures	3.4	1	
	Total			6	
Tier 3 Point Total (RO/SRO)				13/17	

Facility: <u>Perry</u>		Date of Examination: <u>1/08/01</u>
Examination Level (circle one): RO / SRO		Operating Test Number: <u>2001-01</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Procedure Working Copy	JPM – Verify a Working Copy of a procedure is current prior to use K/A 2.1.21
	Interpret Station Electrical Drawings	JPM – Determine the effects of Relay B21-K129B failure K/A 2.1.24
A.2	Tracking LCO Required Actions	JPM – Initiate a Daily LCO Surveillance Requirement Sheet K/A 2.2.23
A.3	Facility Radiation Control Requirements	JPM – Obtain a Bichron Tech 50 survey instrument for use in the RRA K/A 2.3.1
A.4	Event Classification	JPM – Classify event K/A 2.4.41

Facility: PerryDate of Examination: 1/08/01Examination Level (circle one): **RO** / SROOperating Test Number: 2001-01

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Procedure Working Copy	JPM – Verify a Working Copy of a procedure is current prior to use K/A 2.1.21
	Interpret Station Electrical Drawings	JPM – Determine the effects of Relay B21-K129B failure K/A 2.1.24
A.2	Knowledge of Surveillance Procedures	JPM – Review (peer check) a completed surveillance SVI-P47-T2001A K/A 2.2.12
A.3	Facility Radiation Control Requirements	JPM – Obtain a Bichron Tech 50 survey instrument for use in the RRA K/A 2.3.1
A.4	Knowledge of the RO's responsibilities in E-Plan implementation	Question Topic – Dispatching of Non-Licensed Operator to support in-plant tasks during a Site Area Emergency. K/A 2.4.39
	Knowledge of the Emergency Plan	Question Topic – Identify the offsite Agencies requiring notification, and time frames, in the event an emergency is declared. K/A 2.4.29

Facility: Perry Date of Examination: 1/08/01Exam Level (circle one): RO / SRO(I) / **SRO(U)** Operating Test No.: 2001-01

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. HPCS DG / Parallel and Load HPCS DG (Faulted) 264000	M, A, S	6
b. Main Steam / Open MSIVs 239001	N, S, L	3
c. RCIC / Manually Initiate RCIC (Faulted) 217000	N, A, S	2
d.		
e.		
f.		
g.		

B.2 Facility Walk-Through

a. RHR C Runout Injection 203000	D	4
b. CRDH / CRD Alternate Injection (Start Second CRD Pump) 201001 / 295031	D, R	1
c.		

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: PerryDate of Examination: 1/08/01Exam Level (circle one): **RO** / **SRO(I)** / SRO(U) Operating Test No.: 2001-01**B.1 Control Room Systems**

System / JPM Title	Type Code*	Safety Function
a. Nuclear Closed Cooling / Shift NCC Pumps 400000	N, S	8
b. HPCS DG / Parallel and Load HPCS DG (Faulted) 264000	M, A, S	6
c. Main Steam / Open MSIVs 239001	N, S, L	3
d. Main Turbine / Turbine Roll Following Turbine Trip (Quick Restart) (Faulted) 245000	N, A, S, L	4
e. CVDWP / Startup to Intermittent Mode 223001	N, S	5
f. RPS / Pulling Scram Fuses 212000 / 295015 / 295037	D, S	7
g. RCIC / Manually Initiate RCIC (Faulted) 217000	N, A, S	2

B.2 Facility Walk-Through

a. RHR C Runout Injection 203000	D	4
b. Standby DG / Division 2 DG Restoration (Faulted) 264000 / 295003	N, A	6 #
c. CRDH / CRD Alternate Injection (Start Second CRD Pump) 201001 / 295031	D, R	1

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Substituted APE/EPE for Safety Function

Facility: Perry Scenario No.: 1aOp-Test No.: 2001-01Examiners: _____

_____Operators: _____

Objectives: Evaluate the applicants' ability to: replace feedpumps on Startup Level Controller (SULC) at high power; increase reactor power using recirc flow; evaluate tech specs for a failed HPCS water level instrument (Level 2); implement off-normal procedure for an unplanned change in reactor power due to a single control rod scram as a result of a failed APRM; implement off-normal procedure for an earthquake which results in a failure (closed) of the Main Turbine Lube Oil (MTLO) temperature control valve and a trip of a turbine building closed cooling (TBCC) pump; execute plant emergency instructions for a recirc pipe break in the drywell with a failure to scram (ATWS), including a failure of RHR Pump A; and execute plant emergency instruction that requires RPV flooding to restore adequate core cooling due to a loss of all RPV water level instrumentation.

Initial Conditions: Plant is at 85% power per SCC direction. MOL pull sheets (Step 79). IOI-3, Section 4.6, Step 2. RFPT B is on the SULC in Auto and RFPT A is on its Manual Speed Dial due to I&C testing/calibration of the RFPT flow controllers. Testing of RFPT A flow controller is completed.

Turnover: 1. BOP operator replace feedpumps on Startup Reactor Level Control at high power per SOI-C34 with RFPT A on the SULC and RFPT B on its Manual Speed Dial to support I&C testing/calibration of RFPT B flow controller. 2. Increase reactor power to 90% (after the feedpump shift is completed).

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Replace feedpumps on Startup Level Control at high power.
2		R (RO)	Increase reactor power from 85% to 90% using recirc flow
3	BS02: 1B21N067G	I (BOP)	HPCS water level 2 instrument trip unit 1B21N673G spurious trip (TS 3.3.5.1. and 3.3.6.1)
4	NM04H 100%	I (RO) C (RO)	Single control rod scram (26-35) due to APRM H failure upscale (TS 3.3.1.1 and ORM 6.2.1)
5	AV02: 1P41F0030 CP02: 1P44C001B	C (RO) C (BOP)	MTLO TCV positioner failure closed due to seismic event TBCC Pump B failure due to seismic event
6	TH02A 10%	C (All) M (All)	Recirc pipe break resulting in drywell pressurization and reactor scram
7	RD15-10% CP02: 1E12C0002A	C (RO) M (All) C (BOP)	Failure of RPS and ARI to automatically shutdown the reactor ATWS RHR Pump A shaft seizure
8	rmf losslevel	I (All) M (All)	Loss of all RPV water level indication RPV Flooding to restore adequate core cooling

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Perry Scenario No.: 1c

Op-Test No.: 2001-01

Examiners: _____

Operators: _____

Objectives: Evaluate the applicants' ability to: decrease reactor power using recirc flow; evaluate tech specs for a failed C85 pressure regulator channel; place RWCU F/D A in service; implement off-normal procedure for a pipe break outside of containment due to a RWCU pipe break in the Aux Bldg with a RWCU pump failure due to a shaft seizure and a failure of a RWCU containment isolation valve to automatically isolate; evaluate an ESW Pump B discharge pressure low alarm bistable card failure during ESW Pump B operation; evaluate tech specs for a trip of RHR Pump B during suppression pool cooling operations; implement off-normal procedures for a loss of a Class 1E divisional DC bus and an unplanned change in reactor power due to a trip of both recirc trips which requires a manual reactor scram; execute plant emergency instructions to prevent exceeding Containment pressure suppression pressure limit due to a rupture of the scram discharge volume (SDV).

Initial Conditions: Plant is in operation with reactor power at 75%. BOL pull sheet (Step 89, gang 47 at 24). IOI-3, Section 4.6, Step 2. RHR Loop B is in the suppression pool cooling mode due to weeping SRV F047B. There are 6 days and 16 hours remaining on the ALCO for TS 3.5.1.

Turnover: 1. Reduce reactor power to 70% per SCC request. 2. Per Chemistry request, BOP operator place RWCU F/D A in service (currently in hold mode). 3. Secure suppression pool cooling when SP temperature has been reduced to 75 F.

Event No.	Malf. No.	Event Type*	Event Description
1		R (RO)	Decrease reactor power from 75% to 70% using core flow
2	PT01: 1C85N0001A 0%	I (RO)	Main steam pressure transmitter failure (downscale) for C85 pressure regulating channel A (TS 3.2.2)
3		N (BOP)	Place RWCU F/D A in service
4	CP02: 1G33C0001A CU04 5% MV04: 1G33F0001	C (RO) C (All) C (BOP)	RWCU Pump A failure due to shaft seizure RWCU pipe break in the Auxiliary Building Failure of RWCU containment isolation valve G33F001 to automatically isolate (TS 3.6.1.3)
5	AN:1H13 P60117A[42] ON	I (BOP)	ESW Pump B low discharge pressure alarm bistable card failure
6	CB01: 1E12C0002B	C (BOP)	Trip of RHR Pump B while in SP Cooling mode (TS 3.5.1; 3.6.1.7; 3.6.2.3)
7	ED09B	C (ALL) C (RO)	Loss of Class 1E divisional DC bus ED1B resulting in a trip of both recirc pumps requiring a manual reactor scram Failure of RPS to automatically shutdown the reactor (RO manually initiates ARI to shutdown the reactor)
8	RD16 40%	M (ALL)	Loss of coolant accident in Containment due to scram discharge volume rupture

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Perry Scenario No.: 2a

Op-Test No.: 2001-01

Examiners: _____

Operators: _____

Objectives: Evaluate the applicants' ability to: reset Recirc flow control cavitation runback; evaluate tech specs for a malfunctioning Division 1 DG governor (oscillations) and perform unload and shutdown of DG; perform alarm response instructions for a failure of the Generator hydrogen cooler temperature controller in the Auto mode; evaluate tech specs for a failure of an LPRM detector (upscale) including bypassing an LPRM; implement off-normal procedure for a loss of feedwater heating due to a malfunction of the fdw heater 6A level control valves; decrease reactor power using recirc flow in preparation for motor feed pump (MFP) shutdown from operating to secured status due to vibration problems; implement integrated operating instruction for a fast unload and trip of the main turbine due to an EHC hydraulic oil leak at CIV #5 (Main Turbine trip will cause a reactor scram); execute plant emergency instructions due to a low RPV water level, including a trip of the remaining feedwater pump and failure of the HPCS injection valve to auto open; execute plant emergency instructions for a RPV bottom head pipe break in the drywell and a rupture of the scram discharge volume (SDV) which results in Containment pressurization, including failure of an RHR containment spray valve to open and degradation of the remaining RHR pump; and execute plant emergency instructions that require emergency depressurization prior to exceeding pressure suppression pressure including failure of an ADS SRV to open.

Initial Conditions: Plant is at 68% power due to a trip of RFPT A. EOL pull sheets (Step 82). IOI-3, Section 4.6, Step 4. RFPT B and the MFP are on the MLC due to an unexplained trip of RFPT A at the end of last shift. ONI-N27, Supplemental Action #4 (reset recirc FCV runback) still needs to be completed before ONI-N27 can be exited. ONI-C51 was entered and exited. Division 1 DG is paralleled to the grid at 3000 kW. Previous shift had just completed the transfer of Bus EH11 to its preferred source (per the POD).

Turnover: 1. Reset the recirc flow control cavitation runback per SOI-B33. 2. Unload and shutdown Division 1 DG per SOI-R43. 3. Increase reactor power when directed by SCC.

Event No.	Malf. No.	Event Type*	Event Description
1		N (RO)	Reset recirc flow control cavitation runback.
2	DG04A 75%	I (BOP) N (BOP)	Div 1 DG governor oscillations (TS 3.8.1) Unload and shutdown Div 1 DG
3	CN02: 1P44R0436 0%	I (BOP)	Generator hydrogen cooler temperature controller failure in AUTO mode
4	NM03 100%	I (RO)	LPRM 08-17 (5C) failure upscale (TS 3.3.1.1) Bypass LPRM 08-17 (5C)
5	AV02: 1N25F0280A AV02: 1N25F0290A	C (BOP)	Loss of fdw heating due to malfunction of fdw heater 6A level control valves

Facility: PerryScenario No.: 2a

Op-Test No.: 2001-01

6	ZA1N27R0330 4.2 ZA1N27R0329 3.9	C (RO)	Motor Feed Pump high vibration
		R (RO)	Decrease reactor power from 68% to 63% using recirc flow Shutdown MFP from operating to secured status
7	TC03E 0% TC05 20%	C (RO)	CIV #5 failure closed
		C (ALL)	Fast unload and trip of main turbine due to an EHC hydraulic oil leak
8	CP01: 1N27C0002B RY02: 1E22K9	M (All)	Main turbine and reactor scram, low RPV level due to no high pressure fdw pumps
		C (RO)	RFPT B shaft breakage
		C (BOP)	HPCS injection valve (F004) auto open circuit failure
9	TH02C 100% RD16 2% MV01: 1E12F0537A CP03: 1E12C0002B 75%	M (All)	RPV bottom head drain pipe break resulting in drywell pressurization
			Loss of coolant accident in Containment due to scram discharge volume rupture
		C (BOP)	Containment spray valve fails as-is (blown control power fuse)
10	RV04: 1B21F0041E	C (BOP)	RHR Pump B degradation
		M (All)	Emergency Depressurization prior to exceeding Containment pressure suppression pressure
		C (BOP)	ADS SRV failure closed

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Perry Scenario No.: 2c

Op-Test No.: 2001-01

Examiners: _____

Operators: _____

Objectives: Evaluate the applicants' ability to: shift service water pumps; implement off-normal procedure for tornado or high winds due to verbal notification of a severe thunderstorm warning and a lightning strike on a 345 kV transmission line; implement off-normal procedure for an SRV inadvertent opening/stuck open due to a leaking SRV including reducing reactor power using recirc flow and placing an RHR loop in suppression pool cooling mode; implement off-normal procedure for high radiation levels within the plant due to a failure (upscale) of a plant underdrain process radiation monitor; implement off-normal procedure for a feedwater flow control malfunction due to a failure (downscale) of a steam flow process transmitter; implement off-normal procedure for a loss of AC power due to a loss of off-site power including a failure of the Division 2 DG to auto start; execute plant emergency instructions due to loss of high pressure injection systems; execute plant emergency instructions due to heatup of the suppression pool due to leaking SRVs; and execute plant emergency instructions that require emergency depressurization due to low RPV water level in order to restore adequate core cooling.

Initial Conditions: Plant is at 98% power. MOL pull sheets (Step 77). IOI-3, Section 4.6, Step 35. The HPCS System is tagged out for coupling alignment with 13 days remaining on the ALCO for TS 3.5.1. The Unit 1 Startup Transformer was removed from service per SOI-S11 at the end of last shift due to low oil level. There is a PLCO for TS 3.8.1 for the Unit 1 Startup Transformer. The In-Field Unit Supervisor is currently searching for the misplaced tagout for the Unit 1 Startup Transformer.

Turnover: 1. Shift Service Water (start SW Pump C, then secure SW Pump A) in preparation for quarterly schedule work. 2. Hang the clearance for the Unit 1 Startup Transformer.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Shift Service Water pumps
2	CB01: S610PYTIE MRF ED01 OUT MRF ED10 OUT	C (RO) C (BOP)	Generator breaker S610PYTIE trips open (loss of Eastlake line) Switchyard breaker S612PYTIE trips open (loss of Eastlake line)
3	RV02: 1B21F0051A 5% TH23A as is	C (BOP) R (RO) I (RO)	SRV F051A leakage (TS 3.4.4 and 3.6.1.6) Decrease reactor power from 98% to 90% using recirc flow Recirc FCV A servo failure (FCV does not move) (TS 3.4.1 and 3.4.2) Startup RHR in suppression pool cooling mode (TS 3.5.1)
4	PT01: 0D17N0933 100%	I (BOP)	Plant Underdrain process radiation monitor spike upscale
5	PT01: 1C34N0003 A 0%	I (RO) N (RO)	Steam flow transmitter failure downscale Transfer RFPT from the manual speed dial to Startup Rx Level Control

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6	TF01: 2S11S0002 RY01: 1R43RSDG2	M (All) C (BOP)	Loss of Off-Site Power due to loss of Unit 2 Startup Transformer (TS 3.8.1) Division 2 DG failure to start (TS 3.8.1)
7	BS02: 1E51N0655A BS02: 1E51N0655E	M (All) I (BOP)	Reactor scram with subsequent loss of all high pressure injection systems RCIC System isolation due to failure (upscale) of exhaust rupture diaphragm trip units
8	RV02: 1B21F0051C 100%	C (All)	SRV F051C leakage resulting in heatup of the suppression pool and loss of reactor coolant inventory
9		M (All)	Emergency depressurization when RPV water level cannot be maintained above -25 inches

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor